

UTILITY PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No. 7,660,583	)	Serial No. 10/804,263
	)	
Inventor(s): Harri PEKONEN, et al.	)	Filed: March 19, 2004
	)	
Issue Date: February 9, 2010	)	Attorney Docket No. 004770.00167

For: **ADVANCED HANDOVER IN PHASED-SHIFTED AND TIME-SLICED NETWORKS**

**REQUEST FOR CERTIFICATE OF CORRECTION**

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Sir:

Pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322, this is a request for the issuance of a Certificate of Correction in the above-identified patent. A copy of PTO Form 1050 is appended. The complete Certificate of Correction involves 1 page.

The mistakes identified in the appended Form occurred through no fault of the Applicants', as clearly disclosed by the records of the application, which matured into this patent. Enclosed for your convenience is the amendment filed June 30, 2009.

Issuance of the Certificate of Correction containing the corrections is respectfully requested. Since these changes are necessitated through no fault of the Applicants', no fee is believed to be associated with this request. Nonetheless, should the Patent and Trademark Office determine that a fee is required, please charge our Deposit Account No. 19-0733.

Respectfully submitted,

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UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO.: 7,660,583  
DATED: March 19, 2004  
INVENTOR(S): Harri PEKONEN, et al.

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 12, Line 58, Claim 6:  
Please delete "farther" and insert --further--.

In Column 13, Line 36, Claim 19:  
Please delete "farther" and insert --further--.

In Column 14, Line 53, Claim 25:  
Please delete "burst" and insert --bursts--.

In Column 14, Line 67, Claim 25:  
Please delete "station" and insert --stations--.

In Column 15, Line 2, Claim 25:  
Please delete "whether" and insert --whether to--.

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U.S. PAT. NO 7,660,583

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## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	5613369
<b>Application Number:</b>	10804263
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	7432
<b>Title of Invention:</b>	Advanced handover in phased-shifted and time-sliced networks
<b>First Named Inventor/Applicant Name:</b>	Harri Pekonen
<b>Customer Number:</b>	22907
<b>Filer:</b>	Christopher Merle Swickhamer/Amy Stedman
<b>Filer Authorized By:</b>	Christopher Merle Swickhamer
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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		00167response1.pdf	142091 f46c5909ab00bb5343a520f91513891fd1b4b2	yes	13
	<b>Multipart Description/PDF files in .zip description</b>				
	<b>Document Description</b>		<b>Start</b>	<b>End</b>	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	9	
	Applicant Arguments/Remarks Made in an Amendment		10	13	

**Warnings:****Information:**

2	Request for Continued Examination (RCE)	00167rce1.pdf	768841 972fd7c21174966ea315a8e11e1a1f08c21b6758	no	3
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**Warnings:****Information:**

3	Fee Worksheet (PTO-875)	fee-info.pdf	31792 5280b77723d17de08325c76c24242e8edbd5226	no	2
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<b>Total Files Size (in bytes):</b>			942724
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**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

#### **Listing of Claims:**

1. (Currently Amended) A method comprising:

(A) receiving a first channel burst broadcasted from a first base station of a unidirectional broadcast network on a wireless channel, wherein the first base station serves a first cell, and wherein the first channel burst supports a data service, and wherein the first channel burst comprises timing information identifying a time period of a subsequent channel burst to be transmitted by the first base station;

(B) determining whether a serving signal quality associated with the first cell satisfies a handover criterion;

(C) in response to (B), obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell, wherein (C) further comprises: if, based on the timing information, the measurements cannot be completed before receiving the subsequent channel burst;

(i) suspending the obtaining of the measurements;

(ii) receiving the subsequent channel burst from the first base station; and

(iii) in response to (ii), resuming the obtaining of the measurements;

(D) if a selected signal quality is acceptable, deciding to perform a handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell;

(E) after performing (D), receiving a final channel burst from the first base station; and

(F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station of the unidirectional broadcast network such that the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell.

2. (Currently Amended) The method of claim 1, wherein (C) comprises:  
~~(i) setting an interrupt flag if the obtaining of the measurements cannot be completed before receiving the final subsequent channel burst from the first base station, and~~  
~~resetting the interrupt flag upon reception of the subsequent channel burst~~~~suspending obtaining the measurements;~~  
~~(ii) receiving another channel burst from the first base station; and~~  
~~(iii) in response to (ii), resuming obtaining the measurements.~~

3. (Original) The method of claim 1, wherein the serving signal quality is determined from the first channel burst.

4. (Original) The method of claim 1, wherein the serving signal quality is selected from a group of indicators consisting of a received signal strength indicator (RSSI) value, a bit error rate (BER), a packet error rate (PER), and a frame error rate (FER).

5. (Original) The method of claim 1, wherein (D) comprises:  
 (i) adjusting the selected signal quality by a hysteresis value.

6. (Original) The method of claim 1, further comprising:  
 (G) determining the list of candidate cells.

7. (Original) The method of claim 6, wherein (G) comprises:  
 (i) receiving handover information from the first base station, wherein the handover information comprises candidate information indicative of the list of candidate cells.

8. (Original) The method of claim 1, further comprising:  
 (G) determining a phase shift offset that is associated with the selected candidate cell.

9. (Original) The method of claim 8, wherein (G) comprises:  
 (i) receiving handover information from the first base station, wherein the handover information comprises the phase shift offset that is associated with the selected candidate cell.

10. (Original) The method of claim 8, further comprising:  
(H) in response to (E), suspending reception on the wireless channel until performing (F).
11. (Previously Presented) The method of claim 10, wherein (H) comprises:  
(i) instructing a module of a wireless terminal to reduce power consumption.
12. (Original) The method of claim 1, further comprising:  
(G) if a candidate signal quality is not acceptable, removing the associated candidate from the list of candidate cells.
13. (Original) The method of claim 1, wherein (F) comprises:  
(i) receiving the new channel burst associated with a different frequency.
14. (Original) The method of claim 1, wherein (F) comprises:  
(i) receiving the new channel burst associated with a different channelization code.
15. (Currently Amended) A computer-readable medium having computer-executable instructions ~~that, when executed, cause a processor to for performing~~ the method recited in claim 1.
16. (Currently Amended) A computer-readable medium having computer-executable instructions ~~that, when executed, cause a processor to for performing the step method~~ recited in claim 10.
17. (Previously Presented) The method of claim 1, further comprising serving a digital broadband broadcasting area and the data service is associated with a digital broadband broadcasting service.
18. (Previously Presented) The method of claim 1, further comprising accessing a lookup table to determine a phase shift offset associated with the selected base station.

19. (Original) The method of claim 1, further comprising:
  - (G) in response to (E), determining that the serving signal quality is not indicative of a handover; and
  - (H) in response to (G), canceling the handover to the selected candidate cell.
  
20. (Currently Amended) An apparatus comprising:
  - a storage buffer;
  - a timing module; and
  - a radio module configured to communicate with a wireless system over a wireless channel;

a processor configured to receive an indication from the timing module that a current first channel burst is being transmitted, wherein the current first channel burst contains a first group of data packets, and configured to store the first group of data packets into the storage buffer, the processor configured to perform:

  - (A) receiving a first channel burst broadcasted from a first base station of a unidirectional broadcast network on a wireless channel, wherein the first base station serves a first cell and wherein the first channel burst supports a data service, the first channel burst comprising timing information identifying a time period of a subsequent channel burst to be transmitted by the first base station;
  - (B) determining whether a serving signal quality associated with the first cell satisfies a handover criterion;
  - (C) obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell, wherein (C) further comprises: if based on the timing information, the obtaining of the measurements cannot be completed before receiving the subsequent channel burst:
    - (i) suspending the obtaining of the measurements;
    - (ii) receiving the subsequent channel burst from the first base station; and
    - (iii) in response to (ii), resuming the obtaining of the measurements;
  - (D) if a selected signal quality is acceptable, deciding to perform a handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell;



(E) after performing (D), receiving a final channel burst from the first base station;  
and

(F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station of the unidirectional broadcast network such that the handover occurs between the final channel burst and the new channel burst, wherein the selected candidate base station is serving the selected candidate cell.

21. (Previously Presented) The apparatus of claim 20, wherein the processor is configured to perform:

(G) adjusting the selected signal quality by a hysteresis value.

22. (Previously Presented) The apparatus of claim 20, wherein the processor is configured to perform:

(G) determining a phase shift offset that is associated with the selected candidate cell.

23. (Previously Presented) The apparatus of claim 20, wherein the processor is configured to perform:

(G) determining a phase shift offset that is associated with the selected candidate cell;

(H) in response to (E), suspending reception on the wireless channel until performing (F); and

(I) in response to (H), instructing a module of a wireless terminal to reduce power consumption.

24. (Previously Presented) The apparatus of claim 20, wherein the processor is configured to perform:

(G) if a candidate signal quality is not acceptable, removing the associated candidate from the candidate list.

25. (Currently Amended) An apparatus comprising:

a communications module configured to receive a plurality of channel bursts broadcasted from a first base station of a unidirectional broadcast network before a handover and a new channel burst from a selected base station and configured to controllably tune to one of a

plurality of base stations, wherein the plurality of channel bursts and the new channel burst support a data service on a wireless channel, and wherein at least one of the plurality of channel bursts comprises timing information identifying a time period of a subsequent channel burst to be transmitted by the first base station;

a measurement module configured to obtain signal quality information from the communications module, the signal quality information being indicative of the first base station and the selected base station, the selected base station being a member of the plurality of base stations; and

a handover analysis module:

configured to instruct the communications module to tune to said one of the plurality of base stations and to instruct the measurement module to obtain corresponding signal quality information corresponding to said one of the plurality of base stations;

configured to process the signal quality information to determine whether the to handover to the selected base station is necessary;

configured to determine if, based on the timing information, the obtaining of the signal quality information cannot be completed before receiving the subsequent channel burst, to instruct the measurement module to suspend the obtaining of the signal quality information to permit the communications module to receive the subsequent channel burst, and to instruct the measurement module to resume the obtaining of the signal quality information in response to the subsequent channel burst being received;

configured to instruct the communications module to receive a last channel burst from the first base station after the handover analysis module in response to determines determining to perform the handover; and

configured to instruct the communications module to tune to the selected base station of the unidirectional broadcast network and to receive the new channel burst from the selected base station such that the handover occurs between the final channel burst and the new channel burst.

26. (Previously Presented) The apparatus of claim 25, further comprising:

a power control module configured to reduce electrical power to the communications module if provided an instruction by the handover analysis module, wherein the handover analysis module is configured to generate the instruction between a time interval between the last

channel burst and the new channel burst, and wherein the communications module is configured to suspend reception on the wireless channel.

27. (Currently Amended) A method comprising:

(A) receiving a first channel burst broadcasted from a first base station of a unidirectional broadcast network on a wireless channel, wherein the first base station serves a first cell, ~~and wherein the first channel burst supports a multicast service, and wherein the first channel burst comprises timing information identifying a time period of a subsequent channel burst to be transmitted by the first base station;~~

(B) determining a list of candidate cells, wherein the list comprises at least one candidate cell;

(C) determining whether a serving signal quality associated with the first cell satisfies a handover criterion;

(D) obtaining measurements associated with the list of candidate cells, wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell, ~~wherein (D) further comprises: if, based on the timing information, the obtaining of the measurements cannot be completed before receiving the subsequent channel burst;~~

~~(i) suspending the obtaining of the measurements;~~

~~(ii) receiving the subsequent channel burst; and~~

~~(iii) in response to (ii), resuming the obtaining of the measurements;~~

(E) adjusting a selected signal quality by a hysteresis value;

(F) if a candidate signal quality is not acceptable, removing an associated candidate from the candidate list;

(G) if the selected signal quality is acceptable, deciding to perform a handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell;

(H) after performing (G), receiving a final channel burst from the first base station; and

(I) in response to (H), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station of the unidirectional broadcast network such that the handover occurs between the final channel burst and the new

channel burst, wherein the selected candidate base station is serving the selected candidate cell and wherein the new channel burst supports the multicast service.